

WHAT IS CLAIMED IS:

[c1] A method of displaying autostereographic images, comprising:

storing stereopair images;

determining at least one viewing zone in front of at least two transmissive electronic displays spaced one in front of another;

processing a stereopair image to determine a calculated image containing at least some right-eye image information and at least some left-eye image information for each of said at least two transmissive electronic displays;

displaying each said calculated image on each respective transmissive electronic display, wherein each displayed calculated image acts as a mask for the other displayed calculated images; and

backlighting said transmissive electronic displays to display an autostereographic image in said at least one viewing zone.

[c2] The method of claim [c1], wherein processing for each said calculated image comprises iteratively:

estimating the light directed to each of a viewer's eyes by interim images on each of said transmissive displays through each discrete pixel of a nearest transmissive electronic display;

comparing the estimated light for each pixel with the equivalent light from the stereopair to determine an error; and

adjusting said interim images to reduce said error until said error for each pixel is below a set limit to produce a set of calculated images.

[c3] The method of claim [c2] wherein said processing is performed by an artificial

neural network.

- [c4] The method of claim [c1], wherein said at least one viewing zone is determined by a calculation responsive to a sensed viewer position signal.
- [c5] The method of claim [c1], wherein each said calculated image is determined for a display to a plurality of viewing zones.
- [c6] The method of claim [c1], further comprising processing a plurality of stereopairs for display to a plurality of viewing zones.
- [c7] The method of claim [c1], further comprising positioning a mask between adjacent transmissive electronic displays to suppress Moiré patterns.
- [c8] The method of claim [c7], further comprising selecting a diffuser as said mask.
- [c9] The method of claim [c1], further comprising selecting said displays from the group comprising liquid crystal displays (LCDs), gas plasma displays, and organic light emitting polymer (OLEP) displays.
- [c10] A system for displaying autostereographic images, comprising:
- means for storing stereopair images;
 - at least two transmissive electronic displays spaced one in front of another;
 - at least one viewing zone in front of said at least two transmissive electronic displays;
 - means for processing a stereopair image to determine a calculated image

containing at least some right-eye image information and at least some left-eye image information for each of said at least two transmissive electronic displays;

means for displaying each said calculated image on each respective transmissive electronic display, wherein each displayed calculated image acts as a mask for the other displayed calculated images; and

means to backlight said transmissive electronic displays to display an autostereographic image in said at least one viewing zone.

[c11] The system of claim [c10], wherein said means for processing each said calculated image comprises iterative means to:

estimate the light directed to each of a viewer's eyes by interim images on each of said transmissive displays through each discrete pixel of a nearest transmissive electronic display;

compare the estimated light for each pixel with the equivalent light from the stereopair to determine an error; and

adjust said interim images to reduce said error until said error for each pixel is below a set limit to produce a set of calculated images.

[c12] The system of claim [c11] wherein said means for processing is an artificial neural network.

[c13] The system of claim [c10], further comprising a viewer position sensing means to determine said at least one viewing zone.

[c14] The system of claim [c10], further comprising processing means for each said calculated image to be determined for display to a plurality of viewing zones.

[c15] The system of claim [c10], further comprising means for processing a plurality of stereopairs for display to a plurality of viewing zones.

[c16] The system of claim [c10], further comprising a mask positioned between adjacent transmissive electronic displays to suppress Moiré patterns.

[c17] The system of claim [c16], wherein said mask is a diffuser.

[c18] The system of claim [c10], wherein said displays are selected from the group consisting of liquid crystal displays (LCDs), gas plasma displays, and organic light emitting polymer (OLEP) displays.